

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 40-52 are presently active in this case. Claims 1-21 were cancelled by a preliminary amendment. The present Amendment adds new Claims 40-52 without introducing any new matter, and cancels Claims 22-39 without prejudice or disclaimer.

The outstanding Office Action rejected Claims 22-39 under 35 U.S.C. § 103(a) as unpatentable over Wakamoto (Japanese Patent No. 05-225933) in view of Elabd (U.S. Patent No. 5,760,403).

To clarify certain features of the claims and to better comply with U.S. claim drafting practice, Claims 22-30 are cancelled and new Claims 40-52 are presented. New Claims 40-52 find non-limiting support in Applicant's disclosure as originally filed, for example in Figures 1-5, and in the specification starting at page 15, line 3. No new matter has been added.

In response to the rejection of Claims 22-39 under 35 U.S.C. § 103(a), in light of the presentation of new claims, this rejection is now moot. Applicant therefore respectfully requests reconsideration of this rejection, as discussed next.

The features of Applicant's independent Claim 40, as discussed in the specification, are explained with a non-limiting example. A first step of the method of Applicant's Claim 40 is to form of a distortion-free image by waves of the first kind through *an opening, a pinhole for example*, the opening located on a shield placed between the opening and the two dimensional image signal pickup elements, for example an ordinary optical CCD camera. A second step of the method of Applicant's Claim 40 is the imaging of a secondary image of the distortion-free image by waves of the second kind using, for example, *lenses or mirrors* on the image sensor surface of the CCD camera. This CCD camera converts the optical

signals into electrical signals. These two steps illustrate the main aspects of the features of Applicant's Claim 40. Though the size of the distortion-free image by the waves of the first kind is in general larger than the size of the CCD camera, it is possible to pick up the electrical signals of the distortion free large size image on the intermediate plane by a small size CCD by taking the two steps of the image formation and conversion of the wave signals into electrical signals. Please note that the above discussion is provided for explanatory purposes only, and shall not be used to limit the scope of the claims in any fashion.

Turning now to the applied references, Wakamoto describes a technique regarding a radiation camera for detection of shape or output density distribution of the radiation source of an X-ray or a gamma ray with high sensitivity by formation of a distortion-free image by the X-ray or the gamma ray and the signal of the image is transferred to the CCD device 6 via a microchannel 3 by converting the X-ray or gamma ray into visible light by the fluorescent plate 4. (Wakamoto, Abstract.) However, Wakamoto fails to teach all the features of Applicant's independent Claim 40. In particular, Wakamoto fails to teach a step of outputting a corrected image of the object by the two-dimensional image pick-up device, by using information of the first undistorted image and second distorted image for distortion calibration, as required by Applicant's independent Claim 40. The undistorted image on the front side of the fluorescent plate 4 is not used in Wakamoto.

The applied reference Elabd, used by the pending Office Action to form a 35 U.S.C. § 103(a) rejection, fails to remedy the deficiencies of Wakamoto, even if we assume that the combination is proper. Elabd is directed to a charge coupled device x-ray sensor, where a high imaging resolution is achieved by a method of simultaneously measuring the modulation transfer functions of the X-ray and the visible images. (Elabd, Abstract.) However, just like Wakamoto, Elabd also fails to teach a step of outputting a corrected image of the object by the two-dimensional image pick-up device, by using information of the first undistorted

image and second distorted image for distortion calibration, as required by Applicant's independent Claim 40.

Therefore, even if the combination of Wakamoto and Elabd is assumed to be proper, the cited passages of the combination fails to teach every element of Applicant's Claim 40. Accordingly, Applicant respectfully traverses, and requests reconsideration of this rejection based on these references.

Moreover, the reference Wakamoto and/or Elabd fail to teach the features of Applicant's dependent claims. For example, because the image in the secondary image-forming system may be distorted in general, distortion of the image needs to be corrected when a distortion-free image is required for an application. When the distorted image is acceptable in some application, the correction of the distortion is not necessary. The method of distortion correction described in Applicant's dependent Claim 41 is to establish a one-to-one correspondence between all or almost all discrete points of the distortion-free image on the intermediate plane and all or almost all corresponding digital elements of the CCD camera and by making a table of the one-to-one correspondence. Using this one-to-one correspondence represented in the table between the grid points of the plane and the grid points of the image sensor of the two dimensional CCD array, the distorted image is corrected. These features of Applicants' dependent Claim 41 are also not taught by the references Wakamoto and/or Elabd.


Independent Claim 48 recites features that are analogous to the features recited in independent Claim 40, but directed to an apparatus. Accordingly, for the reasons stated above for the patentability of Claim 40, Applicants respectfully submit that the rejections of Claim 48, and the rejections of all associated dependent claims, are also believed to be overcome in view of the arguments regarding independent Claim 40.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 40-52 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

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